

Appendix 11: Documentation of Consistency with Aquatic Conservation Strategy Objectives of the Plentywater Creek Project Watershed Restoration Projects (Wildlife Habitat Enhancement Project, Fish Habitat Enhancement Project, Campground Rehabilitation Project, Road Stabilization Project) by Alternative¹

ACS Objective 1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Alternative 1: The current distribution, diversity and complexity of watershed and landscape-scale features would be maintained. **Does not retard or prevent the attainment of ACS Objective 1.**

Alternative 2: Implementation of Alternative 2 would restore ACS Objective 1. The addition of large wood to the stream channel would increase the diversity and complexity of aquatic habitat within the Dairy Creek watershed. Rehabilitating the campground would restore a diversity of riparian plant species within the riparian area. The road stabilization would help restore vegetation. The wildlife habitat creation project would restore diversity and complexity to approximately 80 acres within the watershed by creating downed wood, snags and promoting individual tree growth. **Restores ACS Objective 1.**

ACS Objective 2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. The network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian dependent species.

Alternative 1: The current condition of connectivity would be maintained. **Does not retard or prevent the attainment of ACS Objective 2.**

Alternative 2: Implementation of Alternative 2 would restore connectivity within the watershed. Addition of large wood to the stream would help restore the connection between the active channel and the floodplain, and help improve connectivity along the stream channel. Rehabilitating the campground would promote addition connectivity within the RR. The wildlife habitat project would increase diversity and provide more connectivity for species that depend on snags, downed logs, and late seral habitat. The road stabilization would not have much impact on connectivity within and between watersheds. **Restores ACS Objective 2.**

¹Watershed Restoration projects are the same for all action alternatives. This means that there are two alternatives for the Watershed Restoration; Alternative 1 (No Action) and Alternative 2 (Proposed Action).

ACS Objective 3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

Alternative 1: The current condition of the physical integrity of the aquatic system would be maintained. **Does not retard or prevent the attainment of ACS Objective 3.**

Alternative 2: Addition of large wood would help maintain and restore the physical integrity of the streams. Large wood armors streambanks, retains substrate on top of bedrock stream bottoms and also creates scour in the substrate to form pools, which are currently lacking in the system. The campground rehabilitation will also help restore streambanks by restoring vegetation on a disturbed site immediately adjacent to the stream. The road stabilization and wildlife habitat creation would have little impact on the physical integrity of the aquatic system. **Maintains and restores ACS Objective 3.**

ACS Objective 4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Alternative 1: The current condition of water quality would be maintained. **Does not retard or prevent the attainment of ACS Objective 4.**

Alternative 2: There would be some turbidity created through the placement of logs in the stream channel and equipment operating within and adjacent to the stream channel. This turbidity would be short-term, and almost exclusively during the actual instream work. Turbidity would be minimized by following ODFW guidelines for timing of in-water work, minimizing the time that heavy equipment is in the stream channel, minimizing the number of equipment access points through riparian areas, and planting or seeding disturbed sites prior to winter rains. Addition of large wood to the stream channel may help reduce turbidity, and thus restore water quality, in the long-term by armoring streambanks, which would reduce bank erosion, and reducing scour by lowering water velocity. There is a possibility of chemical contamination (fuel/oil/hydraulic fluid spills) due to heavy equipment working in and adjacent to streams. To minimize the chance of spills, equipment would be regularly checked for problems, such as leaks and broken hoses. To minimize impacts should a spill occur instream, containment booms would be placed downstream of equipment working in the stream channel. Any spill would be quickly contained and cleaned up, and would only impact a very small portion of the stream. There would be no *chronic* chemical contamination or nutrient input. The campground rehabilitation has the potential to create some short-term turbidity due to subsoiling adjacent to the stream, however it would restore this water quality in the long-term by eliminating a disturbed, compacted area adjacent to the stream. The road stabilization, will also help restore water quality though planting a disturbed area to help limit sediment movement from the site. The wildlife habitat creation would not impact water quality.

Maintains and restores ACS Objective 4.

ACS Objective 5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Alternative 1: The current condition of the sediment regime would be maintained. **Does not retard or prevent the attainment of ACS Objective 5.**

Alternative 2: Sediment regime within the stream channel would be maintained and restored. Addition of large wood to the stream channel may help reduce sediment input to the stream in the long-term by armoring streambanks, which would reduce bank erosion, and reducing scour by lowering water velocity. Large wood creates pools and low velocity areas where sediment naturally drops out of the water column and is stored, thus restoring the sediment routing within the stream channel. The campground rehabilitation has the potential to create some short-term sediment movement due to subsoiling adjacent to the stream, however it would help restore the sediment regime in the long-term by eliminating a disturbed, compacted area adjacent to the stream. The road stabilization will also help restore water quality through planting a disturbed area to help limit sediment movement from the site. The wildlife habitat creation would not impact the sediment regime. **Maintains and restores ACS Objective 5.**

ACS Objective 6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

Alternative 1: The current condition of in-stream flows would be maintained. **Does not retard or prevent the attainment of ACS Objective 6.**

Alternative 2: The projects would have no impact on instream flows. **Maintains and does not retard or prevent the attainment of ACS Objective 6.**

ACS Objective 7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

Alternative 1: The current condition of floodplain inundation and water tables would be maintained. Currently there are locations within the Dairy Creek watershed where the stream channel has been downcut and streams do not have access to the floodplains except during extremely high flow events. This condition is due to a number of things, including lack of large wood and roads built in floodplains. Without input of large wood to the stream channel, these areas will most likely remain in the current condition. There are few trees left within the watershed that would get into stream channels through natural processes, therefore meeting this objective is unlikely without some active intervention, such as the addition of large wood to the channel. The no action alternative is likely to **retard the attainment of ACS Objective 7.**

Alternative 2: Currently there are locations within the Dairy Creek watershed where the stream channel has been downcut and streams do not have access to the floodplains except during extremely high flow events. Addition of large wood to streams and floodplains would help restore floodplain connections and thus restore the timing, variability and duration of floodplain inundation in a small portion of the watershed. The other 3 projects would have no impact on floodplain inundation and water table elevation. **Maintains and restores ACS Objective 7.**

ACS Objective 8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Alternative 1: The current condition of plant communities within riparian areas would be maintained. **Does not retard or prevent the attainment of ACS Objective 8.**

Alternative 2: Riparian vegetation would be disturbed at equipment access points if the fish habitat project was implemented, however these areas comprise a very small percentage of the riparian area within the watershed. In addition, all areas disturbed during instream work would be planted and/or seeded with native vegetation. Riparian planting is also proposed in the campground rehabilitation project, which would increase plant diversity and reestablish native vegetation. Overall, the species composition and structural diversity of plant communities in riparian areas would be maintained and restored. The wildlife habitat enhancement project includes work within RR and would help enhance plant communities by increasing diversity and complexity. **Maintains and restores ACS Objective 8.**

ACS Objective 9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.

Alternative 1: The current condition of habitat to support riparian-dependent species would be maintained. **Does not retard or prevent the attainment of ACS Objective 9.**

Alternative 2: Riparian vegetation and habitat for riparian dependent species would be disturbed at equipment access points if the fish habitat project was implemented, however these areas comprise a very small percentage of the riparian area within the watershed. In addition, all areas disturbed during instream work and the campground rehabilitation area would be planted and/or seeded with native vegetation, restoring habitat for riparian-dependent species. Addition of large wood to stream channels and floodplains would restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species. The wildlife habitat enhancement project includes work within RR; creating snags, additional coarse woody debris and releasing trees would enhance habitat for riparian-dependent species. **Maintains and restores ACS Objective 9.**

WA = Dairy-McKay Watershed Analysis (BLM, 1999)